



Winston H. Hickox
Agency Secretary

Air Resources Board

Alan C. Lloyd, Ph.D.
Chairman

1001 I Street • P.O. Box 2815 • Sacramento, California 95812 • www.arb.ca.gov



Gray Davis
Governor

December 21, 2001

Dear Interested Party:

The California Environmental Protection Agency (Cal/EPA) and the California Air Resources Board (ARB) wish to install an operating fuel cell system at the Joe Serna, Jr./California Environmental Protection Agency Headquarters Building (Building), 1001 I Street, Sacramento, California. The ARB would like to invite you to submit a six-to-eight (6 to 8) page preproposal, no later than 4 p.m. on Tuesday, January 22, 2002, describing your fuel cell system equipment and installation recommendation and the estimated installed cost. We will use these submissions to evaluate the various fuel cell technologies, installation requirements and associated costs to select one or more contractors to develop full, detailed proposals. The available funding for this project will be no more than \$1.2 million. Project completion is expected by mid-July of 2002. All aspects of the project will be coordinated through the ARB contract manager, to be designated at the time of contract signing.

It is intended that this will be a permanent working fuel cell system installation, as opposed to a demonstration, prototype, or research project. The fuel cell system will provide electrical power and heat for a significant portion of the Building's daily needs (a combined heat and power (CHP) installation). The installation will be used as a showcase for fuel cell technology, clearly displaying to the public the technology's immediate availability, efficiency, reliability, and environmental friendliness in its ability to produce clean, dependable and economical electric power and heat. A brief preliminary list of the principal technical requirements and a preliminary statement of work for the project are included in Attachment A to this letter for your use in preparing your preproposal (note that these items are preliminary and subject to modification before any invitation for a full proposal is made).

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

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This project will be solicited and contracted under the provisions of California Senate Bill SBX1_5, which provide a waiver for the requirements for formal advertising and competitive solicitation (for the text of the bill, see:

http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=sbx1_5&sess=CUR&house=B&author=she).

To qualify for contract consideration under these provisions, please complete the application forms included in Attachment B to this letter and submit them with your preproposal. These forms will be evaluated to determine your qualifications for inclusion in the required pool of qualified contractors. However, these waiver provisions do not remove the requirement that any contract awarded for this project must meet the State's Disabled Veteran Business Enterprise (DVBE) participation requirement (for more information, please see: <http://www.pd.dgs.ca.gov/osbcr/dvbepp/default.htm>).

In summary, the principal required services for this project include delivery and installation of a fuel cell system at the project site, making all appropriate electrical, fuel and plumbing connections, and meeting all applicable codes and permit requirements (a "turnkey" installation). In addition, the fuel cell system installation and operation shall be conducted in an environmentally friendly manner, befitting the project's purpose as an environmental technology showcase. Each preproposal should discuss the prospective bidder's system equipment recommendation, its recommended installation approach for addressing the preliminary statement of work, and the estimated total project cost. Preproposals should also explicitly discuss physical installation and utility interface requirements, including, but not limited to: process air, heat, fuel, water, control system, electrical power output, input power, auxiliary supplies such as inerting gases, etc.

If you are interested in undertaking this project, please provide 15 copies of your preproposal to arrive at the following address no later than 4 p.m. on Tuesday, January 22, 2002:

Cal/EPA Building Fuel Cell System Preproposal
California Air Resources Board
Research Division/5th floor
1001 I Street
P.O. Box 2815
Sacramento, California 95812

Please do not include proprietary or confidential information in your preproposal. Each preproposal prepared in response to this solicitation will be prepared at the sole cost and expense of the submitter and with the expressed understanding that there will be no claims whatsoever for reimbursement from Cal/EPA or ARB. The ARB reserves the right not to issue a full proposal invitation, as circumstances necessitate.

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It is expected that preproposal evaluation will be completed by the end of January 2002. Once completed, selected submitters, if any, will be asked to tender a full proposal by the end of February 2002. Preproposal cost estimates are non-binding, but are expected to be closely representative of costs to be proposed in a binding full proposal. If you have any questions or need further information, please call me at (916) 445-4383 or Mr. Steve Church, Air Resources Engineer, Research Division, at (916) 322-8280 or schurch@arb.ca.gov.

Thank you for your interest in this project, and I look forward to receiving your preproposal.

Sincerely,

/s/

Michael P. Kenny
Executive Officer

Attachments

cc: Mr. Steve Church
Air Resources Engineer
Research Division

Attachment A

Preliminary Equipment Requirements and Preliminary Statement of Work

Preproposals should address both of the following sets of specifications and discuss how they will be addressed during the project. The first set lays out the Preliminary Equipment Description and Requirements for the physical components of the fuel cell system and its installation, and the second is the Preliminary Statement of Work describing the tasks necessary for the installation process. While ARB reserves the right to modify any or all of these specifications, they are expected to be closely representative of what will be required in the full proposal.

1) Preliminary Equipment Description and Requirements

Submitted preproposals are expected to address the delivery of a fuel cell system that is commercially available or near commercially available, meeting or exceeding the following requirements:

Operation. It is expected that the fuel cell will be operated at 100 percent of rated power around the clock, seven days per week.

Fuel. The fuel cell system shall be fueled by pipeline-quality natural gas at typical urban street pipeline pressures. The prospective bidder shall specify its natural gas pressure and composition requirements in its preproposal. During the project, the contractor shall coordinate all necessary agreements and work with the natural gas supplier regarding physical interconnections.

Rated power. The minimum rated electrical power of the fuel cell system shall be 200kW AC output in continuous usage. It is expected that the fuel cell system shall perform within 5% of rated power, as demonstrated by the initial acceptance test, at the end of five years.

Electrical efficiency. The preproposal shall provide data on the measured electrical efficiency of the unit as a function of power output level. Efficiency values shall be provided based on both lower heating value and higher heating value of the fuel. The preproposal shall also provide data describing efficiency decay as a function of time over the life of the fuel cell system. These data may be a combination of measured efficiency and modeled efficiency should insufficient measured data be available.

Availability. The preproposal shall provide data on the measured availability of the proposed fuel cell system. Discussion and calculation basis for the claimed availability shall also be provided.

Warranty. The fuel cell system should be covered by performance breakdown and degradation warranties for the fuel cell system for a minimum period of five years. Any warranty costs shall be included in the purchase price. The preproposal shall provide a discussion of warranty details.

Service agreement. Provision for a five-year service agreement to cover parts and labor for unscheduled maintenance or repairs after warranty expiration, and guaranteeing 95 percent availability, shall be included in the price. The preproposal shall provide a discussion of service agreement details.

Installation location. The space allocated for the fuel cell system installation is on the north side of the Cal/EPA Headquarters Building, 1001 I Street, Sacramento, California. (Photographs of this site are included as Figures 1, 2 and 3, and the relevant portion of the Building site plan is shown as Figures 4a and 4b.) The available area is approximately 15 feet wide by 60 feet long. The contractor will need to compensate for any weight limitations due to proximity to the Building, including basement walls. Movement of fencing to increase available space may be possible but is discouraged.

Architect. The contractor shall coordinate all plans with the Building architects, AC Martin Partners, 811 West Seventh Street, Los Angeles, CA 90017.

Electrical connection. The fuel cell system shall be connected to a building service bus (3-phase, 480 V) and will be operated in grid-parallel mode. The capability to operate in grid-independent mode shall be available in case of utility grid power failure. At times of low Building demand, power will be supplied to the electrical grid rather than the Building. The grid interface shall be UL 1741 certified and shall provide grid protection functions per IEEE 1547.

Stack replacement. The interval between the formal fuel cell system startup date and the predicted time when stack replacement is required shall be no less than three (3) years, with an interval of five (5) or more years strongly preferred. The preproposal shall provide descriptions of necessary stack replacement criteria (e.g., output or efficiency decay rates and minimum acceptable reduced-performance levels), and expected replacement interval and replacement cost estimates (parts and labor) over fifteen years of operation of the fuel cell system. The cost of the first fuel cell stack replacement shall be included in the bid price.

Emissions. Regardless of date of manufacture or installation, the fuel cell system shall meet the emission standards contained in the distributed generation regulations recently approved by the ARB (for further information, see: <http://www.arb.ca.gov/energy/dg/dg.htm>). The installation shall readily lend itself to the in-use emissions testing described in these regulations. The preproposal shall provide data on emissions from the fuel cell during various operating conditions, including startup, warmup and shutdown.

By-product heat utilization. To the maximum extent possible, by-product heat from the fuel cell system shall be provided to the building loading dock and receiving areas for space heating purposes, and to the existing hot water supply storage tank

located in the basement of the Building (see Figure 4a). The preproposal should also suggest and discuss other uses for by-product heat keeping in mind any project cost impacts. The installation must provide for the dissipation of any by-product heat not used for Building purposes.

Communications/data logging/Building control system integration. If available, the contractor shall provide all necessary software and hardware to allow remote access to fuel cell system operating parameters for remote displays, and for web site display. In addition, the operation of the fuel cell system shall be integrated as tightly as possible with the existing building control system (Johnson Controls model Metasys PMI-10.01a, BAS). Complete integration will allow monitoring and control of the fuel cell system's operation, including the use of by-product heat, via the existing control system.

Building ventilation. Gaseous exhaust products from the fuel cell system shall be vented in a manner and location so as to be undetectable at Building ventilation intakes under all potential meteorological conditions.

Identify hazardous waste. The preproposal will identify the types and amounts of any hazardous or toxic waste produced by the fuel cell system during its planned lifetime, either in operation or during maintenance, and identify the means necessary and estimated associated costs to properly dispose of any such material. Waste and disposal identifications must consider local, state and federal requirements and regulations.

Appearance. The exterior color of the fuel cell system components shall complement the Building's existing color scheme as closely as possible. Methods acceptable to local codes and requirements to screen the view of the equipment from the street shall be included. The preproposal shall provide information on component dimensions and weight.

Noise. The sound level from the fuel cell system shall be as low as possible, consistent with any state, local or federal requirements and with its location near office and residential areas. The preproposal shall discuss and provide data on the maximum measured sound levels at all operating conditions.

Codes. The fuel cell system and its installation must meet the appropriate technical codes for performance and safety of the applicable standards organizations including, but not limited to, the American Gas Association, the National Fire Protection Association, Underwriters Laboratories, American Society of Mechanical Engineers, and the American National Standards Institute. In addition, the installation of the fuel cell system will adhere to all applicable portions of the Uniform Building Code, and any applicable local or State codes.

Removability. The fuel cell system installation must be designed so that it can be disconnected and removed. All connections shall include appropriate additional valves, disconnects, etc. so as to readily isolate the system from the utilities, and all foundations and anchoring devices shall be removable.

Security. Provisions for fuel cell system security shall be provided, including appropriate fencing and video surveillance equipment compatible with existing Building security systems.

Other. The preproposal description of the fuel cell technology that is offered for this project shall include the following: the type of fuel cell to be provided for installation; the material composition of the fuel cell stack(s); the type and manufacturer of each major balance of plant component (reformer, inverter, blowers, compressors, and control system); the annual operating and maintenance requirements; the typical degradation rates of the stack (if data is not available, show projected degradation rates); and a description of any benefits that the proposed fuel cell system may provide over other fuel cell systems.

2) Preliminary Statement of Work These are items to be conducted by the contractor during the project period. The preproposal should discuss the anticipated approach for accomplishing each of these tasks, including details on cost and schedule.

Task 1: Develop Detailed Engineering Plans

The contractor will develop formal engineering plans, including detailed drawings and schedules, for the installation of the fuel cell system at the desired location. These plans will address all related issues including, but not limited to, fuel supply, electrical connections, water connections, environmental requirements and regulations, building codes, noise, structural requirements, city codes and zoning requirements, maintenance accessibility requirements, architectural requirements, etc. These plans must be reviewed and approved by the cognizant parties and agencies including, but not limited to, Cal/EPA, ARB, the California Department of General Services (DGS), the Sacramento Municipal Utility District (SMUD), Pacific Gas and Electric Company, and the City of Sacramento (as the municipal authority and as the Building owner/landlord), before proceeding with Task 3. (ARB will coordinate review by all appropriate State agencies.) Schedule presentations shall include a Gantt chart showing all formal tasks and milestones of the project, and a graphical presentation of the planned cumulative expenditures on a weekly or more frequent basis.

Task 2: Permitting and Coordination

The contractor will apply for and obtain all necessary permits including, but not limited to, construction permits, air quality permits, etc. The contractor must demonstrate that all applicable permitting requirements have been satisfactorily addressed and that all needed permits and approvals have been procured, or can reasonably be expected to be procured, in a timely manner, before progressing to Task 3 (any California Environmental Quality Act (CEQA) requirements are especially important). The contractor will also coordinate with all entities involved, such as the electric and gas utilities, to secure their cooperation in completing the project in a timely manner. Task 2 may be conducted in parallel with Task 1.

Task 3: Unit Delivery and Installation

The complete fuel cell system shall be delivered to the installation site and installed in accordance with the plans, requirements and schedule developed and approved in Task 1.

Task 4: Unit Startup and Commissioning

At an appropriate point in Task 3, and with the prior approval of the ARB contract manager, the contractor will proceed with startup of the fuel cell system, including a reasonable operational checkout and verification period. Upon technical confirmation of a successful installation, and with approval of the ARB contract manager, the contractor will declare the unit operational and will participate in a public unveiling and commissioning ceremony.

Successful installation will be determined, in part, by the nominal operation of the fuel cell system at rated power for a period of one continuous week.

Task 5: Local Operator Training

The contractor will provide training for at least ten individuals to act as local operators. These individuals may be employees of the State, the City, or the Building management company and will be identified to the contractor by the ARB contract manager. Copies of all training and system operation manuals and materials will be provided to each training attendee, with 10 extra copies being provided to ARB for future training needs. The training should prepare these individuals to monitor and adjust system operating parameters as may be needed in routine operation, to recognize and evaluate abnormal operational characteristics that may require non-routine actions to be taken, to conduct routine maintenance, and to shut down the unit should the need arise. If appropriate, training shall cover the steps necessary to restart the system after any operational anomalies have

been corrected. The training will also provide guidelines regarding the need to involve the contractor under the terms of the warranty or service agreement.

In addition, the contractor shall provide briefings to Building management, the local fire department, and other applicable emergency response agencies, to prepare them to respond appropriately in potential emergency situations.

Preproposals will be evaluated with the intent of selecting one or more proponents for invitation to submit a full, detailed and binding proposal for the project, though ARB reserves the right to make no selection as it deems necessary. Emphasis will be placed on system efficiency and environmental friendliness, as well as project cost and ability to meet the scheduled completion date.

Figures 1, 2, and 3 - Photographs of Fuel Cell System Installation Site



Figure 1 - North side of Building, along H Street. Fuel cell site is between fence and setback portion of Building



Figure 2 - Closer view of fuel cell site, from outside of fence



*Note:
Building
Ventilation
Intakes*

Figure 3 – Inside of fence, showing fuel cell site between Building and fence, and Building vents.

Figure 4a-
Portion of
architectural
drawings
showing fuel
cell
installation
location
relative to
loading dock
and hot
water
storage tank.

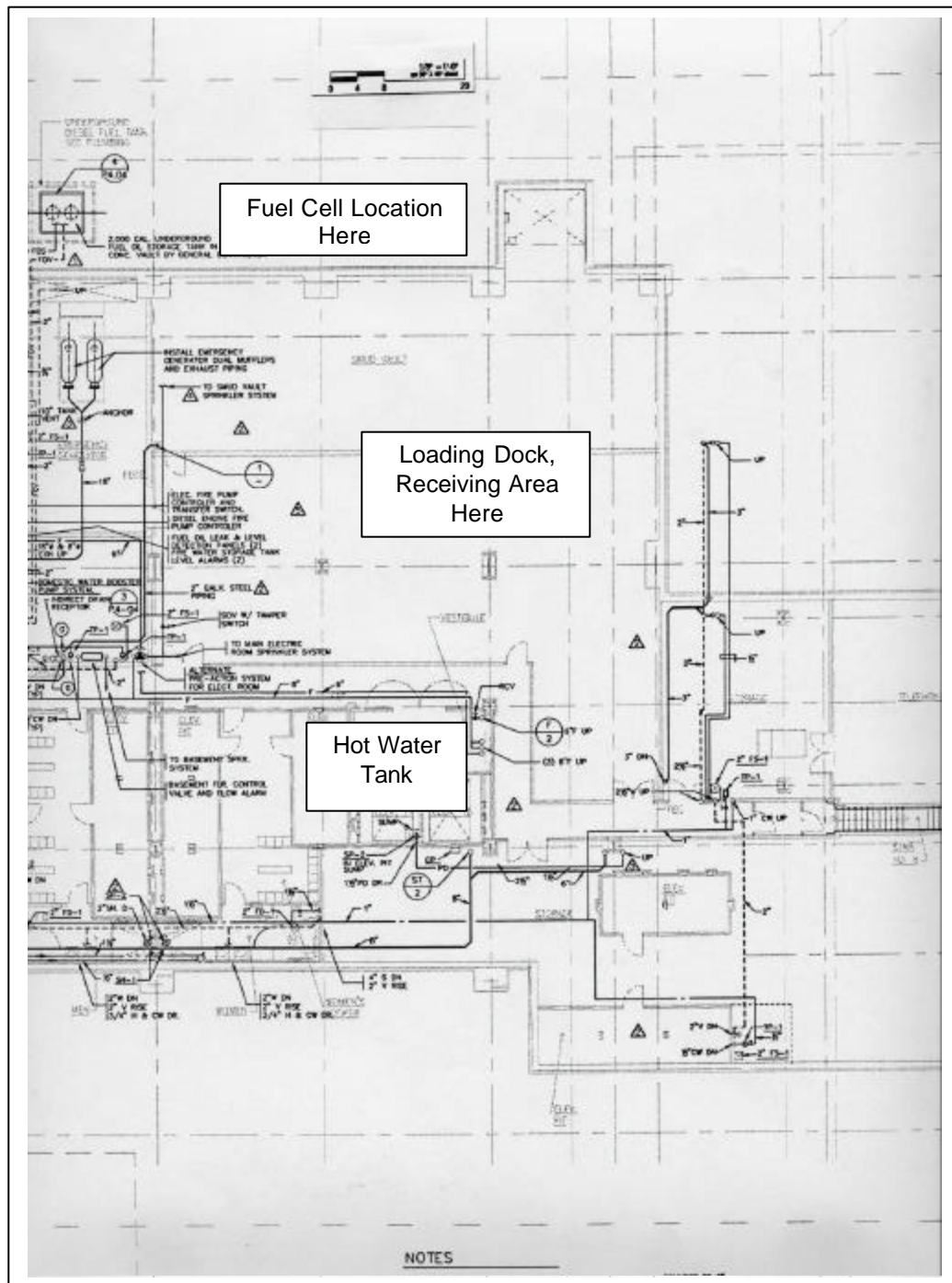
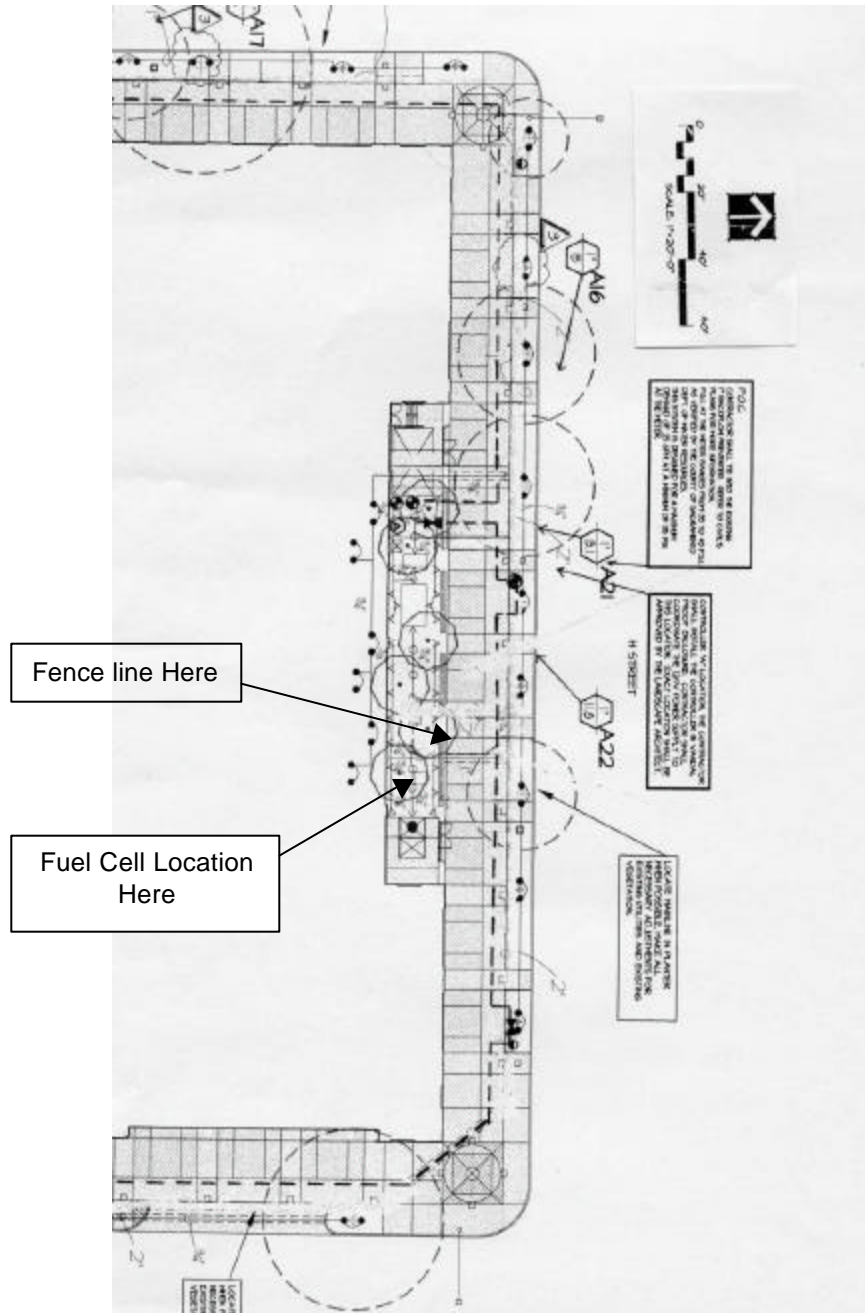


Figure 4b- Portion of architecture drawing showing more installation location information.



Attachment B

Contractor's Qualification Statement
and Application for Qualified Pool
under SBx1_5

Contractors Qualification Statement

California Air Resources Board California Environmental Protection Agency

1001 I Street
P.O. Box 2815
Sacramento, California 95812
Phone: (916) 445-0753
Fax: (916) 322-4357

Qualification Criteria for Energy Projects Under SB5X: Government Code Section 4240

The undersigned certifies that the information provided herein is true and sufficiently complete so as not to be misleading. The State reserves the right to contact all parties listed within your responses to this Qualification Statement. The contractor should provide all contacts and information as requested with full knowledge of the State's intent to verify all information.

ORGANIZATION

Company name:

Date of Incorporation – (Partnership - type):

State of Incorporation – (Partnership):

CEO, Secretary, and Treasurer (General partners):

Address:

Submitted by (name and title):

Principle office:

Contact Person(s):

Phone:

Fax:

Email:

Years in business:

List all subcontractor affiliations necessary for energy efficiency and/or conservation project :

Development and/or implementation:

LICENSING

License classification and jurisdictions or trade categories for which your organization is legally:

Qualified to do business in the State of California:

California contractors license number and date of issuance:

Has your license ever been revoked?

Name of organization's registered Architect or Engineer who will be providing the Certification for projects' design and energy compliance:

BONDING

Are you able to provide a bond, as State projects require performance and payment bonds for the full amount of the Contract?

Name of Bonding Company:

Agent Contact:

Address:

Phone and Fax:

Current bonding limits:

List bonding companies utilized in California over last five years for projects over \$1,000,000:

List any bonding company that has completed any part of your work in the last five years:

FINANCIAL STATEMENTS

Financial qualification will be established by determining capacity to perform state contracts from the following audited financial statements:

1. Balance sheet
2. Income statement
3. Cash flow analysis (optional)
4. Statement of liquidity or liquidity ratio

Name and address of auditors or CPA:

Name and address of credit and bank references (minimum of three):

Dunn and Bradstreet rating if any:

EXPERIENCE

List and describe any California State and/or energy projects with project manager contact information [i.e. name and phone number] that have been implemented by your firm within the last three years. Emphasize projects with components in energy management, efficiency, generation, and water conservation currently under contract or completed over the last three years. Provide the contracting Agency's contact information [i.e. name and phone number] and detail your company's management roles, dollar value of project, energy related scope items, schedule compliance, and any subcontractors involved along with contact information [i.e. name and phone number].

If your company has no relevant state or energy projects, then list recent examples as outlined above of your direct management of multiple, simultaneous, or complex projects complete with cost, scope, contact information for client, subcontractors, and project managers:

List categories of energy management, efficiency, generation, and water conservation work your company normally performs with its own resources:

List any subcontractors your company has employed to implement energy management, efficiency, generation and water conservation projects:

List any energy auditing experience and describe your capability to perform Investment Grade Audits (IGA):

List analytical, modeling, engineering, and design capabilities regarding energy efficiency and water conservation, power generation, distributed generation, and energy management systems:

List other energy-related services such as technology consulting, feasibility analysis, and construction program management services:

Estimated annual value of all work currently under contract:

Define any limitations your company has strategically, financially, operationally, personnel, subcontracting, or other which could restrict your performance:

List any current claims and suits with explanations. List any claims or disputes concerning the State of California with contact information [i.e. name and phone number for the claimant]:

Has your company ever failed to complete any work under contract?

Provide a one-page biography of all individuals in your company who would be assigned to manage and/or staff energy efficiency, generation, and water conservation projects at state facilities including any relevant certification, licensing, training and experience:

Name and contact information of client, trade, and supplier references (minimum of five):

SIGNATURE

Date:

Signature:

Title of signatory:

Name of department and Organization:

Location:

Submit your responses attached to your preproposal.